The performance of electrochemical remediation technologies in soil mechanics

Abstract:

In this paper a review is presented about studies involving the electrochemical remediation technologies in soil mechanics. The previous works include electrochemical technologies based on important approaches for effective and efficient pollution remediation, both on their own and in concert with other remediation techniques. Electrochemical remediation technologies for polluted soils, sediments and groundwater provides a systematic and clear explanation of fundamentals, field applications, as well as opportunities and challenges in developing and implementing electrochemical remediation technologies in geotechnical engineering. Results from these approaches reveal that ionic contaminants are absorbed to sediment particles and are often not available for removal by the simple flushing action of water. The pH shift produced by the electrolysis of the water effectively desorbs contaminating ions. In clayey sediments, hydraulic flow through pores can be extremely limited. Electrokinetic remediation is an effective method of inducing movement of water, ions, and colloids through fine-grained sediment. The aim of this paper is to provide an updated summary of the works in this field and the works have been done summarized together with the outcome of electrochemical science in soil mechanics.